

Frequency of Pregnancy Following Laparoscopic Ovarian Drilling in Patients with Clomiphene Resistant Polycystic Ovarian Syndrome

1. Syed Muhammad Ali 2. Humera Shaheen 3. Sadia Nazir

1. Prof. & Head, Deptt. of Obstetrics & Gynaecology 2,3. Asstt. Profs. of Obstetrics & Gynaecology, DG Khan Medical College, Dera Ghazi Khan

ABSTRACT

Objective: To determine the frequency of pregnancy following laparoscopic ovarian drilling in patients with clomiphene citrate resistant polycystic ovarian syndrome.

Study Design: Retrospective / Observational study

Place and Duration of Study: This study was carried out in the Department of Obstetrics and Gynaecology DG Khan Medical College, Dera Ghazi Khan from November 2012 to May 2013.

Patients and Methods: One hundred eligible patients who suffer from anovulatory infertility and who failed to respond to the treatment with clomiphene citrate were enrolled from outpatient department

Results: Overall frequency of PCOS was 4.84%. Majority of cases of PCOS were in age group 20-30 years. 72% of cases were having primary infertility and 28% were having secondary infertility. 41.86% of cases were resistant to CC in a dose of 150 mg for three cycles. Conception rate was 66% in 6month follow up period after LOD

Conclusion: Laparoscopic ovarian drilling with diathermy should be considered to be a preferred choice for the infertile women with history of failed response to clomiphene treatment as compared to the use of gonadotrophins.

Key Words: Polycystic ovary syndrome, Laparoscopic ovarian drilling, Clomiphene citrate resistance

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INTRODUCTION

The problem of polycystic ovarian disease/syndrome (PCOD/PCOS) has been the subject of research studies over the past six decades. The major clinical manifestations are menstrual irregularities, signs of androgen excess, and obesity.¹ Anovulation is a common problem in women with polycystic ovarian disease. Clomiphene citrate (CC) is accepted as the first-line treatment of choice for infertile women with polycystic ovarian disease, but 25% of the patients do not respond to CC, and remain anovulatory despite increasing doses.² Human menopausal gonadotropins, follicle stimulating hormone, or combination of gonadotropin-releasing hormone agonist and gonadotropins may be used as a second-line treatment.

However, the patients treated with these hormones tend to develop a multifollicle response, with the associated risks of ovarian hyperstimulation syndrome (OHSS) and multiple pregnancies. Laparoscopic ovarian drilling with diathermy has been reported to be a successful method of ovulation induction for those women who do not respond to clomiphene citrate, human menopausal

gonadotropins, follicle stimulating hormone, or combination of gonadotropin releasing hormone agonist, and gonadotropins.³ Pregnancy rates of 27–73% have been reported in the literature. Unlike ovulation stimulation regimens, there is no increase in risk of multiple pregnancy or ovarian hyperstimulation after LOD. Pregnancies are most likely to occur within 6 months of surgery.⁴

PATIENTS AND METHODS

This study was carried out in the Department of Obstetrics and Gynaecology DG Khan Medical College, Dera Ghazi Khan from November 2012 to May 2013. One hundred eligible patients who suffer from anovulatory infertility and who failed to respond to the treatment with clomiphene citrate were enrolled from outpatient department. Laparoscopy was performed via three ports of entry. A 10 mm laparoscope was inserted in the primary sub-umbilical trocar with two additional 5 mm trocars in the lower abdomen. A grasping forceps was used to hold the ovarian ligament for manipulation of the ovary; the diathermy needle was introduced via the other secondary port. Four to six holes was made in the ovarian capsule with a unipolar coagulation current at a power of 40 watts for 4 seconds. Then the pregnancy was recorded (defined by positive urine hCG and the

Correspondence: Dr. Syed Muhammad Ali,
Professor & Head Department of Obstetrics &
Gynaecology, DG Khan Medical College, DG Khan
Cell No.: 03216174488
E-mail: smashmultan@yahoo.com

presence of an intrauterine pregnancy verified by a vaginal ultrasound) during 6 months follow up without the use of any additional ovulatory agents. Data was entered and analyzed using computer programme SPSS 10.

RESULTS

Out of 258 cases of PCOS, 41.9% were resistant to CC in a dose of 150 mg for three cycles. Among 108 CC resistant cases, 100 were selected for LOD. Majority of patients (55%) were in age group 20-30 years (Table 1). Oligomenorrhea were the most common presenting feature i.e. in 89% of cases (Table 2). Out of 100 cases of PCOS, Majority of cases (72%) were having primary infertility (Table 3).

Table No.1: Distribution according to age (n=100)

Age (years)	No.	%
< 20	29	29.0
20-30	55	55.0
31-35	16	16.0

Table No.2: Distribution according to presenting complains (n=100)

Clinical features	No.	%
Oligomenorrhea	89	89.0
Hirsutism	77	77.0
Acne	40	40.0

Table No.3: Distribution according to infertility status (n=100)

Type of infertility	No.	%
Primary	72	72.0
Secondary	28	28.0

DISCUSSION

The Polycystic Ovarian Syndrome (PCOS) remains an incompletely understood entity that appears with regularity in the practice of most gynaecologists. As the presenting symptoms of this group of patients is often infertility due to chronic anovulation, restoration of ovulatory function assumes paramount importance. For all those patients of PCOS who are found to be having a poor response to Clomiphene Citrate, the choice of treatment rests between medical ovulation induction using higher doses, higher stimulants like gonadotrophins or the use of laparoscopic surgical method. Potential advantages of the surgical methods include multiple ovulatory cycles from a single treatment and elimination of the risk of Ovarian Hyperstimulation Syndrome (OHSS). Additionally, high cost and intensive monitoring associated with gonadotropin therapy can be avoided. The objective of this study was to determine the frequency of pregnancy following laparoscopic ovarian drilling in our patients with clomiphene citrate resistant polycystic ovarian syndrome.

PCOS is one of the most common endocrine disorders of women in the reproductive age group, with a prevalence of 4-12%.⁵ In various European studies, the prevalence of PCOS was 6.5-8%.⁶ Under the Rotterdam criteria, the prevalence was 11.9±2.4%.⁷ Our study is showing a little higher frequency of PCOS (26.63%) in infertility cases but this is corresponding with study of Driscoll DA in which the incidence were estimated to be 11-26%.⁸ In another study, of a total of 113 consecutive women recruited, 32 (28.3%) were diagnosed as having PCOS.⁹ Overall frequency was 4.84% in the present study.

Clomiphene citrate has been used as a first-line ovulation induction agent for over 40 years.¹⁰ The majority of women who have infertility associated with chronic anovulation in this disorder ovulate in response to clomiphene citrate. However, up to 30 percent remain anovulatory. Furthermore, of the roughly 70 percent who do ovulate in response to clomiphene citrate, only one-half will conceive.¹¹

The initial therapy for anovulation is clomiphene citrate (CC) but, unfortunately, ovulation is not achieved in almost 40% of PCOS. Various authors report on failure to ovulate at particular dose/cycles.¹² The anovulatory rate at a dose of 150 mg in the study of Branigan et al¹³ was 28% and 20% in Lobo's study.¹⁴ The present study showed a 41.86% anovulatory rate with 150mg/three cycles which is comparable with above mentioned studies. Other reported a rate as high as 72% anovulation with 100 mg cc in three cycles.¹⁵ In 1.10 patients who failed to conceive on clomiphene citrate (treatment started from minimum dose of 50 mg/day to 150 mg/day from day 2-6 of menstrual cycle.⁷

Oligomenorrhea was the most common clinical finding in all subjects i.e. 89% and 77% were having hirsutism. Acne was found to be observed in 40% of cases. This is comparable with a study in which Hirsutism was the most common clinical finding in all subjects of the study group and 75% of the control group showed hirsutism of various grades. Amenorrhea was more common than oligomenorrhea occurrence of hirsutism of 85% in the present study is almost similar to that of Adams.¹⁶

Primary infertility was in 72% of cases and secondary infertility was in 28%. This in agreement with a study in which 72.8% cases were of primary infertility and secondary infertility was observed in 27.2% of cases.⁷ In another study, eleven (68.75%) patients had primary infertility. Five (31.25%) patients presented with secondary infertility.

In our study conception rate were 66% in six month study period. Which is in agreement with most of the previous studies. Armar and Lachelin¹⁷ reported pregnancy rate of 66%, Naether et al 70%.¹⁸ After treatment and 6 months follow up, ovulation occurred in 14 (87.5%) patients. Eleven (68.75%) women conceived pregnancy. In another International study

between June 1996 and June 2003, there were 182 pregnancies in 153 PCOS patients who were treated with laparoscopic ovarian drilling.¹⁹ Some authors have found a correlation between the number of points cauterized and the ovulation rate. We had used maximum 6 points and did not find any difference between 6 and 8 point approach.

CONCLUSION

Laparoscopic ovarian drilling with diathermy should be considered to be a preferred choice for the infertile women with history of failed response to clomiphene treatment as compared to the use of gonadotrophins.

Conflict of Interest: The study has no conflict of interest to declare by any author.

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